

April 22, 2015

Fueled in flight: X-47B first to complete autonomous aerial refueling



The X-47B receives fuel from an Omega K-707 tanker April 22 while operating in the Atlantic Test Ranges over the Chesapeake Bay. This test marked the first time an unmanned aircraft refueled in flight. (U.S. Navy photo)

NAVAL AIR SYSTEMS COMMAND, PATUXENT RIVER, Md. – The X-47B successfully conducted the first ever Autonomous Aerial Refueling (AAR) of an unmanned aircraft April 22, completing the final test objective under the Navy's Unmanned Combat Air System demonstration program.

While flying off the coast of Maryland and Virginia in the [Atlantic Test Ranges](#), the X-47B connected to an Omega K-707 tanker aircraft and received over 4,000 pounds of fuel using the Navy's probe-and-drogue method.

"What we accomplished today demonstrates a significant, groundbreaking step forward for the Navy," said [Capt. Beau Duarte](#), the Navy's Unmanned Carrier Aviation program manager. "The ability to autonomously transfer and receive fuel in flight will increase the range and flexibility of future unmanned aircraft platforms, ultimately extending carrier power projection."

During the test, the X-47B exchanged refueling messages with a government-designed Refueling Interface System (RIS) aboard the tanker. The aircraft autonomously maneuvered its fixed refueling probe into the tanker's drogue, also known as the basket,

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the same way a Navy pilot would refuel a manned aircraft.

"In manned platforms, aerial refueling is a challenging maneuver because of the precision required by the pilot to engage the basket," Duarte said. "Adding an autonomous functionality creates another layer of complexity."

This testing helps solidify the concept that future unmanned aircraft can perform standard missions like aerial refueling and operate seamlessly with manned aircraft as part of the Carrier Air Wing, he said.

"This segment of the X-47B demonstration program allowed us to further mature AAR technologies and evaluate the government tanker RIS," said Barbara Weathers, X-47B deputy program manager. "We used similar command-control and navigation processes previously demonstrated during the X-47B landings aboard the aircraft carrier."

Over the last few years, the Navy accomplished several [significant firsts with the X-47B](#) that showcased the Navy's commitment to unmanned carrier aviation. With the completion of this program, the service continues to develop its future unmanned carrier-based platform, known as UCLASS.

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